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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,264	11/17/2003	Pekka Salminen	014975-091	1735

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EXAMINER	
TRUONG, THANH K	
ART UNIT	**PAPER NUMBER**
3721	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,264	SALMINEN ET AL.	
	Examiner	Art Unit	
	Thanh K. Truong	3721	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7 and 8* is/are rejected.

7)☒ Claim(s) *2 and 4-6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 7, 2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Rogers et al. (4,195,699).

Rogers discloses a method and an apparatus comprising:

a control unit 20 provided with a user interface 36 for controlling the drilling;

at least one sensor 16, 18 for measuring drill operation; and

the operating system is provided with at least two simultaneously active preformed control modes (column 2, lines 2-4) with different control strategies, and each control mode determines at least one criterion to be measured during the drilling, a

threshold value for a measurement result, and at least one adjustable operating parameter (column 2, lines 5-13);

one control mode can be prioritized over the other modes; and the control unit is arranged to automatically adjust, based on the measurement results, the operating parameters determined by the control modes such that the drilling result according to the prioritized control mode is weighted over the other control modes (column 2, lines 67-68 and column 3, lines 1-5).

The recitation "for a rock drilling apparatus", in claim 3, that comprising: a carrier, a feeding beam, and a rock drill is being treated as the preamble of the claim that claimed a control system, and therefore the rock drilling apparatus is not being considered as part of the claim limitation. Moreover, the control system as recited in claim 3 can be used to control other drilling apparatus.

Alternatively, the following 103 rejection is made in the event that the Applicant amends claim 3 as a combination of a control system and a rock drilling apparatus.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (4,195,699) in view of Tuunanen (5,934,387).

Rogers discloses a method and an apparatus comprising:

a control unit 20 provided with a user interface 36 for controlling the drilling;

at least one sensor 16, 18 for measuring drill operation; and

the operating system is provided with at least two simultaneously active preformed control modes (column 2, lines 2-4) with different control strategies, and each control mode determines at least one criterion to be measured during the drilling, a threshold value for a measurement result, and at least one adjustable operating parameter (column 2, lines 5-13);

one control mode can be prioritized over the other modes; and the control unit is arranged to automatically adjust, based on the measurement results, the operating parameters determined by the control modes such that the drilling result according to the prioritized control mode is weighted over the other control modes (column 2, lines 67-68 and column 3, lines 1-5).

Rogers discloses the claimed invention, but does not expressly disclose a carrier; a feeding beam, and a rock drill.

Tuunanen discloses a method and an apparatus comprising: a carrier 1, a feeding beam 3 (a-c), and a rock drill 4 (a-c) movable with respect to the feeding beam (figure 1). Tuunanen apparatus provides a highly effective automatic drilling equipments. Therefore, it would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified Rogers method and apparatus by incorporating the drilling equipments as taught by Tuunanen to provide a effective automatic drilling equipments.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers et al. (4,195,699) in view of Tuunanen (5,934,387) and further in view of Osga (5,757,358).

As discussed above in paragraph 5 of this action, the modified method and apparatus of Rogers discloses the claimed invention, but does not expressly disclose the user interface system as recited in claim 7.

Osga discloses a method and apparatus that comprising a user interface control system in which the user employs the control cursor in the operating area to manipulate the control function. Osga method and apparatus allows user to make selection thru user interface control system and the computer will calculate the result base on the selection.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have modified Rogers method and apparatus by incorporating the user interface control system as taught by Osga providing an effective automatic control system.

Allowable Subject Matter

7. Claims 2 and 4-6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed December 7, 2005 have been fully considered but they are not persuasive.

8. In response to the applicant's argument that Rogers does not disclose or suggest an operating system with at least two simultaneously active control modes with different control strategies, as set forth in claims 1 and 3, the examiner respectfully disagrees.

Rogers clearly discloses that at least two simultaneously active control modes, drill speed (RPM) and thrust (B), with different control strategies (by incrementally changing of one of these variable while retaining the other variable in a constant state) – see figures 3, 4(a-c) and column 2, lines 1-23).

Furthermore, Applicant's disclosure on page 6, lines 3-11, discloses the very similar concept of changing the variable one at a time while holding the other constant.

> *[0024] "M4=optimization mode, where the control unit automatically adjusts the operating parameters one at a time ... this adjustment value is locked and a new operating parameter is selected and adjusted to obtain the allowed area preset for the measuring value. The adjustment is continue in this manner as a continuous cycle".*

9. In response to the Applicant's argument that the examiner interpretation of the term "mode" is not consistent with the proper meaning, the examiner respectfully disagrees.

"an option allowing a change in the method of operation of a device" (the quote that the Applicant provides from the Oxford Dictionary). According to this definition, the terms drill speed, and thrust form Rogers (4,195,699) fit the definition. The drill speed and thrust are inputs that can be varied to effect the operation of the drilling.

10. Regarding to the new claim 8, the optimization of the penetration rate, the optimization of the straightness of a drill hole, and the optimization of the service life of the drilling equipment are interrelated and can not be separated, because the optimization of the penetration rate will in turn provide the optimization of the straightness of a drill hole (the straightness of the drill hole depends on the speed of the drill and the thrust of the drill), and the optimization of the penetration rate also affects the optimization of the service life of the drilling equipment (the drill speed and thrust will affect the friction between the drill bit and the material being drill and thus affect the life of the drilling equipment) (Rogers - column 2, lines 67-68 and column3, lines 1-5; column 4, lines 12-25; column 7, lines 27-52; column 10, lines 56-68 and column 11, lines 1-3).

11. In response to the Applicant's argument that Tuunanen does not teach or suggest the features of control modes with different control strategies, the examiner would like to point out that Tuunanen was relied upon for the teaching of a carrier , a feeding beam and a rock drilling apparatus.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh K. Truong whose telephone number is 571-272-4472. The examiner can normally be reached on Mon-Thru 8:00AM - 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanh K. Truong
Patent Examiner
February 5, 2006.